



**GAMIFIED LESSONS FOR IMPROVING THIRD GRADE
STUDENTS' ENGLISH SPELLING AT BANKANTROK
PRACHASAN SCHOOL, SI SA KET PROVINCE**



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บทคัดย่อ

- เรื่อง : บทเรียนที่มีองค์ประกอบของเกมสำหรับพัฒนาการสะกดคำภาษาอังกฤษของนักเรียนประถมศึกษาปีที่ 3 โรงเรียนบ้านกันทรภักดิ์ประชาสรรค์ จังหวัดศรีสะเกษ
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- คำสำคัญ : บทเรียนที่มีองค์ประกอบของเกม, การสะกดคำ

งานวิจัยนี้มีจุดมุ่งหมายเพื่อศึกษาปัญหาการสะกดคำภาษาอังกฤษของนักเรียนชั้นประถมศึกษาปีที่ 3 โรงเรียนบ้านกันทรภักดิ์ประชาสรรค์ จังหวัดศรีสะเกษ งานวิจัยนี้มุ่งเน้นการใช้บทเรียนที่มีองค์ประกอบของเกมสำหรับพัฒนาการสะกดคำภาษาอังกฤษของนักเรียนชั้นประถมศึกษาปีที่ 3 กลุ่มทดลองคือ นักเรียนที่กำลังศึกษาอยู่ในระดับชั้นประถมศึกษาปีที่ 3 โรงเรียนบ้านกันทรภักดิ์ประชาสรรค์ จังหวัดศรีสะเกษ จำนวน 18 คน โดยใช้เวลาในการทดลองรวม 5 บทเรียน แต่ละบทเรียนใช้เวลา 50 นาที ในแต่ละบทเรียนนักเรียนจะเรียนคำศัพท์ทั้งหมด 6 คำ ซึ่งนักเรียนจะเรียนรวมทั้งหมด 30 คำจาก 5 บทเรียน เครื่องมือที่ใช้ในการวิจัยได้แก่ แบบทดสอบก่อนเรียน และหลังเรียน จำนวน 5 ชุดเพื่อใช้ในการวัดทักษะการเขียนคำศัพท์ สถิติที่ใช้ในการวิเคราะห์ข้อมูลคือ ค่าเฉลี่ยเลขคณิต (Mean) และ สถิติทดสอบ ที (paired t-test)

ผลการศึกษาพบว่า การเขียนสะกดคำผิดของนักเรียน แสดงให้เห็นว่านักเรียนมีพัฒนาทักษะการเขียนสะกดคำ ซึ่งสามารถแบ่งได้ตามความสามารถของผู้เรียน กลุ่มผู้เรียนที่มีความสามารถในการเรียนรู้สูง สามารถพัฒนาทักษะการเรียนรู้ได้มากที่สุด สามารถพัฒนาทักษะการเรียนรู้ได้มากที่สุด ขณะที่กลุ่มที่มีความสามารถในการเรียนรู้ระดับกลางและต่ำ สามารถพัฒนาทักษะการเขียนได้ต่ำลงมาตามลำดับ ผลการวิเคราะห์ความสัมพันธ์ของบทเรียนที่มีองค์ประกอบของเกมสำหรับพัฒนาการสะกดคำภาษาอังกฤษพบว่า การเรียนโฟนิกส์มีผลต่อการสะกดคำศัพท์ที่ซับซ้อนและต้องการส่งเสริมให้แก้ไขข้อผิดพลาดนั้น

ABSTRACT

TITLE : GAMIFIED LESSONS FOR IMPROVING THIRD GRADE
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KEYWORDS : GAMIFIED LESSONS, SPELLING SKILLS

The present study was conducted to investigate English spelling problems among Grade 3 students at Ban Kantrok Prachasan School, Si Sa Ket province. Gamified lessons were adopted in this study in order to reinforce the participants' English spelling skill. The study included all 18 Grade 3 students at the school. They learned through five gamified lessons in five classes, with each lesson lasting 50 minutes. In each lesson, the students learned six target words and learned 30 words from all five lessons. Five pre-tests and identical post-tests were applied in this study to collect the data. Scores were calculated using descriptive statistics, namely standard deviation and means. T-test was also used to compare the means. Their spelling mistakes were categorized into different groups and it was found that the participants generally improved their spelling skills. The group of fast-paced learners had the highest degree of improvement, while the moderate and slow-paced learners experienced a reduced level of improvement. The results are discussed in relation to the efficacy of the gamified lesson to improve spelling, the effects of phonics learning on spelling words with complex spelling, and the need for explicit identification of minor errors.

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CHAPTER 1

INTRODUCTION

1.1 Rationale and Background

Young learners who start learning English as a second language must be exposed to English vocabulary since it is the most important building block for them to later achieve language proficiency. Learning vocabulary can involve different skills, such as listening, speaking, reading, and writing. Influenced by Communicative Language Teaching (CLT) (Richards, 2006), the current language teaching approach in Thailand tends to focus on listening and speaking skills—even when teaching vocabulary to young learners—while writing is taught later. This approach has both positive and negative consequences for learners.

The Thai Ministry of Education encourages teachers to use CLT as their teaching approach. Textbooks are CLT-based. In Thailand, the use of CLT is intended to help learners reach fluency as there have been complaints that Thai students have poor English speaking skills. In language learning, however, accuracy is required as much as fluency. Brumfit (1984) suggested that to create classroom activities, teachers should consider balancing fluency and accuracy activities and using accuracy to support fluency activities. Accuracy work could come either before or after fluency work. Consequently, when teaching vocabulary for young learners, teachers must both consider listening and speaking skills as well as ensure that their students can read and write.

The study was undertaken at Ban Kantrok Prachasan School, Si Sa Ket province, Thailand. At the school, English for beginners classes in Grades 1-3 is conducted through fluency-based CLT. Grade 1 and 2 students learn English with their class teachers who are not English teachers, while Grade 3 students are taught by the researcher, the school's only English teacher. To teach vocabulary, the English Language Institute of the Ministry of Education specifies 154 basic vocabulary words that Grade 3 students must learn. Classroom activities therefore aim to help learners recognize and pronounce a set range of words in English, while writing is not a focus of

the lessons. The school in the present study is a rural school with limited access to educational technologies such as computers which could otherwise facilitate the students' English learning. Due to this context and constraints, instead of computer games or other online games, the study utilizes flashcards designed with game features as the main educational activity to help the Grade 3 students learn the target vocabulary.

As the class teacher, the researcher had existing experience using two types of flashcards, namely picture flashcards and word flashcards, to teach vocabulary. At the end of the lessons, the researcher realized that students required different degrees of help and all needed writing assistance. In class, the researcher first presented each picture and said the vocabulary word out loud for that picture. At this point, the students simply listened and remembered the picture and the word without seeing its spelling. Next, the students practiced saying the word when the picture was shown to them. After that, the teacher presented the flashcard with the word written on it and read to the students. Now, the students were able to see the spelling of the word. The students repeated the pronunciation after the teacher, and were required to remember and read the words shown to them on the flashcards.

This teaching method includes listening and speaking at a very basic or micro skill level. The teaching method has been effective since most students could say the target words when they saw the pictures. By the end of the lesson, most of the students could read and pronounce the taught vocabulary. However, all the students faced the same problem when they needed to write the words down, despite this being a skill they need as much as word recognition and pronunciation. This context prompted the researcher to identify the need for a study to help improve the Grade 3 students' English spelling skills.

To consider this problem, the present study identifies spelling problems faced by all learners. These problems could from several factors, especially learner motivation. Masaeng (1989) indicated that a classroom with no stimulating, enjoyable, or innovative activities can negatively affect young Thai students. Presently, teaching through games or gamified lessons have become popular, and this might resolve issues posed by unmotivated learners (Dichev and Dicheva, 2017). There are many online games available for students to access on the internet, such as Kahoot, Unscramble, and Letter Blocks. Nevertheless, without the availability of technology and the internet, it is

impossible to make use of these useful online games in this particular school context. Fun and enjoyable lessons which include offline classroom games may therefore help in this regard.

In the present study, the researcher proposes gamified lessons be used as part of the teaching technique to enhance students' micro-writing skills or spelling. Using game elements, it is hypothesized that the lessons will be fun and motivate children to learn.

1.2 Purpose of the study

The main purpose of this study is to examine how gamified lessons can enhance lexical learning for young learners. The study focuses on the English spelling skills of Grade 3 Thai EFL students.

The Grade 3 students learned about phonic sounds in the first semester, which showed that they had different learning abilities. Based on their English grades from previous semesters and the teacher's observations of their learning behavior, the students were considered to be either fast, moderate, or slow-paced learners.

The students were classified by their English results from the previous semester. The fast learners achieved 3 or 4 out of 4, the moderate-paced learner's English got 2 or 2.5 out of 4, while the slow-paced learners had 1 and 1.5 out of 4. For their learning achievement, the fast learners were good at word recognition according to the phonic sounds. They were able to say the name of the picture and read the word they saw. The moderate-paced learners were able to read some words but were unable to write them. Finally, the slow-paced learners were unable to say the name of the picture and could not read any of the words, even if they had learned those words together with students from the other two groups. Therefore, the purpose of this study is to examine whether gamified lessons can help students of different learning abilities.

1.3 Scope of the study

The study aims to explore how elements of games embedded in lessons can support young learners' lexical learning. The students' spelling skills are the target of this study. To achieve the learning outcomes, the activities included word recognition, word meaning, and word spelling. Word recognition and word meaning activities were included, but since the teacher's experience suggested that the students in this study

were not challenged by word recognition or meaning, these activities were only included to give students necessary information about the target words before learning to spell them. The study's main aim is to help the students improve their English word spelling. It is hoped that the gamified lessons focused on word spelling will support the students' spelling skills.

1.4 Research question

With reference to the study purpose and scope, the devised research question to guide this study are as follows: *To what extent can gamified lessons help improve Grade 3 students' English spelling skills?* It must be noted that the study was conducted using a semi-experimental design. Students' pretest and posttest scores from the spelling ability tests are used as evidence in the study.

1.5 Hypothesis

Theoretically, it is expected that gamified activities will help to improve the young learners' spelling skills. From this theoretical basis, it is hypothesized that the gamified lessons in the present study will positively affect the Grade 3 students' word spelling.

1.6 Significance of the study

This study utilizes techniques of gamification to adapt designed activities in English teaching. The study results are expected to help improve the vocabulary skills of all Grade 3, no matter their existing language proficiency.

1.7 Definition of key terms

Gamified lessons: Lessons developed with game features to teach English word spelling to Grade 3 students. Game features include having points, badges, levels, and rewards as parts of the lesson.

Spelling skills: Spelling skills refer to the ability to accurately write an English word.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter includes five sections. The first section deals with the concept of young learners to help provide a consideration for selecting appropriate content and teaching methods in the second section. Ideas related to games and their use in the classroom are reviewed in the next part, while related studies are reviewed at the end of the chapter.

2.2 Young learners

Young learners are different from other types of language learners. The term *young learner* is used to refer to children from the first year of primary school. Willis (2001) proposes that the age range of young learners is between 5 and 12 years old. According to the Willis (2001), children aged 5 to 7 are categorized as *very young learners* (VYL), while those between 7 and 12 are called *young learners* (YL). As far as this categorization is concerned, the learners in the present study are considered YL because they are all 9 years old. The use of *young learners* as a theoretical concept will help deal with appropriate lesson content and teaching methods for this particular group of learners.

2.3 Teaching English to young learners

Young learners of a foreign language can usually be characterized as those who have only just begun learning a new language. YLs might be at the A1 CEFR level due to their very limited competence in the second language. Because they are very young and have only just begun learning the language, teachers must consider two important questions before teaching to make the lessons more appropriate and effective. These questions are what to teach, and how to teach them.

2.3.1 What to teach?

Researchers have argued over what to teach YLs when they first start learning a new language. There are arguments about whether they should be taught

grammar first, or whether it is instead more important to learn vocabulary before anything else. In this section, the review suggests that vocabulary should be given priority.

Language is a complex communication tool and learning it means learning its sounds, lexicon, and grammar, as well as other pragmatic rules. Carter and McCarthy (2014) stated that vocabulary is the most important ingredient for learners to possess any level of language proficiency. Similarly, Saville-Troike (2012) divided the different levels or areas of knowledge which L1 and L2 learners must acquire. These areas of knowledge include knowledge of lexicon (vocabulary), phonology (sound system), morphology (word structure), syntax (grammar), nonverbal-structures and discourse. Like Carter and McCarthy, Saville-Troike (2012) considered that lexicon or vocabulary should be the first and is the most important language component that new learners acquire.

Other researchers echo this position. For instance, Wilkins (2002, p.111) believed that “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed.” Grammar is important, but learners are unable to express any thoughts if they do not know any words in the second language. Mastering the language requires YLs to know the vocabulary of that language. Therefore, in language teaching, vocabulary must be considered to be the first thing that teachers teach, especially when teaching YLs.

The present study follows the above line of argument by focusing on teaching vocabulary to YLs. As suggested by Saville-Troike (2012), vocabulary teaching involves teaching word meaning, pronunciation, and spelling, as well as elements of speech and collocation. The present study focuses solely on spelling because the participants are Thai Grade 3 students of English at Ban Kantrok Prachasan School who do not have problems with word recognition and meaning. The students in this group have different abilities, so it would be inappropriate to include parts of speech and collocation in the lessons at this stage. Moreover, time constraints limited the potential study breadth.

2.3.2 How to teach?

It is important to know what to teach, but that is not enough to teach young learners. Successful teaching requires teachers to think about different groups of

learners in their class and the general disposition of their learning styles.

First, teachers need to consider activities appropriate for the learners' characteristics. Browers and Vasilyeva (2011) stated that vocabulary is highly useful for young learners of L2, since a larger vocabulary will allow them to better understand the L2. Nonetheless, classes can consist of a wide range of learners with differing abilities. Some learners can learn very quickly, whilst others may take much longer to understand the same thing. Teachers should therefore think carefully when designing tasks for young learners, while also ensuring that the activities are appropriate for both fast and slow-paced learners in mixed ability classrooms. Second, it should be noted that young learners are generally unable to concentrate for long periods of time. To deal with this, teachers should allow movement, interaction, and make the lessons fun. Accordingly, it is recommended that teachers design their activities to ensure the learners can interact with one another. To make them engage with the activities, it is necessary to consider using body movement, mimics, and gestures. Making an enjoyable class is another element to consider. Since the present study is conducted with young learners, game ideas are suitable. O'Brien and Petera (2019) suggest that gamification helps engage students in terms of creating exciting and adaptable active learning experiences which can involve problem solving and recognition. Cassie (2016) explained that lessons should be gamified because this makes them fun and engaging, makes it easy for learners to retain knowledge, changes learning behaviors, and creates recognition through rewards. The present study designed group activities to help young learners learn by adopting game ideas.

2.4 Using gamified lessons to teach English to young learners

A game is an entertaining activity as well as a competition. Games are a commonly used method in foreign language teaching which benefits both teachers and students. Games should therefore be used as a tool when teaching vocabulary to young learners.

2.4.1 Elements of gamification

Game features include having points, badges, obstacles, levels, competition, milestones and an avatar as part of the lesson. Four elements of gamification are adopted in the present study, including points, badges, levels, and rewards to gamify the English learning lessons. Points are used to reward learners' success in each activity, with each

learner's progress represented by the number of points they collect. Badges are considered to be special bonus elements or points and used to represent a learner's achievements when they earn or collect them. Leaderboards are used to determine who performs well or the best in the classroom activities. Levels aim to motivate those who are at a low level to improve and pay more attention in the next lesson. Levels also refer to different achievement checkpoints as goals for young learners to aim for. Finally, rewards refer to objects used to inspire young learners to achieve the learning outcomes of all the lessons.

Young learners enjoy competition and having fun, so learning alongside play will help young students while learning English. Word recognition and spelling skills are crucial for the learners to achieve the lesson outcomes. The lesson in this study was designed considering the young learners' learning abilities. Using gamified lessons, it is expected that the students' spelling skills will improve.

2.4.2 Teaching vocabulary

Teaching English vocabulary is not only about presenting word meanings from a dictionary, rather, the teacher must also consider how to make the students interested and engage with the activities. Jones (2013) suggested students learn the most easily when they are interested in having fun. Game and activities that engage students will help them create stronger memory. These interesting ideas should be considered when teaching vocabulary. The present study subsequently followed these conceptual ideas in the creation of materials suitable for using a game to teach vocabulary.

Games can help vocabulary teaching in various ways. Since games are fun and engaging, it is easier for learners to retain knowledge, change their learning behaviors, and create recognition through rewards (Bakhsh, 2016). Quispe-Vargas (2016) stated that the application of useful, well-selected games will encourage learners to recall words in an enjoyable manner. Moreover, Flora (2009) indicated that using games provides a relaxed and fun environment which helps learners learn better in the classroom. Other researchers had similar opinions, with Macintyre (1991) explaining that the most children are visual learners. They prefer a demonstration rather than listening to the instruction, while William (2017) added that teachers can use fun, and educational games in the classroom. Wendling and Mather (2018) explained that

choosing the right game can positively influence student learning. Hence, using games in teaching vocabulary is both necessary, helpful, and promising.

Thai students generally have poor English skills, so classroom activities must be designed to motivate student learning. Using games to teach vocabulary to young learners will help create a fun learning atmosphere. However, since the classroom at the school where the present study was conducted lacks educational technology aids such as computers or iPads, while the rural students were unable to afford them, the present study instead utilized offline classroom games. Moreover, the game ideas were required to be educational, so instead of focusing on using games in their own right, the study applied ideas related to games to gamify lessons.

2.5 Teaching spelling

Spelling is the process of writing the letters of a word or the ability of a person to write or spell words. Spelling is important for learners. For instance, Moats (2005; 2006) indicated that “proficiency in spelling actually supports reading.” Spelling is a type of literacy skill that develops the writing skills of young learners when they grow up. Young learners with poor spelling skills may face obstacles when they want to communicate. It is therefore important that spelling is taught to young learners. Nonetheless, McKeurtan (2019) stated that spelling skills can be an issue for beginner English learners. Being good at spelling requires practice, focus, and good memory.

Waugh, Warner, and Waugh (2019) suggested that classroom activities should be adaptable in the classroom for young learners for them to be good at spelling, including through the use of games to highlight sounds and letter strings, developing learners’ interest in letters and words, and through the use of ‘Breakthrough to Literacy’, Emergent Writing, ‘environmental print’, dictionaries and thesauruses, the development of drafting techniques, and the use of word processors.

From the discussion above, teaching spelling to young learners in primary school is important and can be achieved by developing classroom activities which are suitable for them to learn a new language they are not familiar with. Moreover, games are effective and useful to teach spelling by encouraging student classroom involvement.

2.6 Thai EFL learners

In Thailand, students are expected to begin learning English when they start primary school. The Ministry of Education has specific competencies that students should reach at each level. Grade 3 students are expected to know about 300-450 words, while Grade 6 students should know 1200 words (Ministry of Education, 2001). Vocabulary is therefore important for Thai EFL learners, as they are required to begin learning English in Grade 1.

Despite so many pedagogical concepts and teaching techniques having been adapted for English teaching, such as learner-centered language curriculum, communicative language teaching, content-based learning, task-based learning, and constructivism, Thai students continue to perform poorly in English. Learning English as a foreign language is also difficult for Thai students. According to the Bureau of Education Testing of Thailand, the mean English scores of Grade 6 shows that the majority of primary school students failed to achieve the expectations of the Office of Education (Prasongsook, 2010).

The students' low English ability is reflected in the O-NET results in general, including in reading. Vocabulary is the most important element in the reading section of O-NET. It appears that more attention should be spent on teaching vocabulary, since it is almost impossible for learners to read without sufficient knowledge of English vocabulary. Learners should have firm knowledge about vocabulary at a young age. It is suggested that for vocabulary learning, Thai students should be taught using phonics since this has been proved to be an effective method. Young learners taught vocabulary through phonics have been found to performed well in letter recognition, letter formation, sound recognition, and sound identification (Niyom, 2017). The phonics method is popular in most schools in Thailand, and similar results can be expected. The Grade 3 students in the present study learned word recognition and meaning, while the researcher's observations suggest they had good learning achievement. What is missing in vocabulary teaching for young learners is spelling, and it is necessary to rectify this in teaching.

2.7 Related studies

In this review there are three groups of study. First, it was found that using CLT to

teach does not help Grade 3 students learn. Second, using phonics helps improve some aspects of vocabulary learning. Finally, games are beneficial for teaching vocabulary to young learners.

Although CLT is the mainstream teaching method, it has been found that it may not be useful for young learners in Thailand. Prasongsook (2010) studied English teaching and learning at Grade 3 in Thailand. The teachers were provided with the three teaching units using different methods within a communicative approach: One unit of a weak version of communicative language teaching (CLT weak version); one unit of the concentrated language encounter method using paper materials (CLE+paper); and one unit of the concentrated language encounter method using computer-based language activities (CLE+COBLA). Prasongsook (2010) found that most of the teachers had difficulties when using the CLT approach to teach Grade 3 students. From this study, it might be better to use other teaching methods to help young English learners in Thailand.

Second, phonics have been proved to be effective for teaching vocabulary, but it might not be enough to teach all aspects of vocabulary (Niyom, 2017; Phummalai, 2014). Niyom (2017) examined the effectiveness of the eng Hour phonics instructional program with 94 Thai Grade 1 students on the Ministry of Education's English Literacy program. Six identical pretests and posttests were used to collect data on the following skills: (1) letter recognition; (2) letter formation; (3) sound recognition; (4) sound identification; (5) sound segmentation; and (6) sound blending. The results showed that the students' English literacy improved in all six areas tested for literacy development after the eng Hour phonics instructional program was implemented in the classroom. Nevertheless, the study did not shed light on teaching word meanings.

Phummalai (2014) studied the use of electronic books to develop English word spelling using phonics methods. The study included 22 Grade 3 students at a Thai primary school. Six units of the lesson were used to examine the participants' spelling improvements, with a word spelling test and a questionnaire used to collect study data. The study results reveal that the students' English word spelling improved through the use of the phonics method after using the electronic book. Moreover, the questionnaire data suggests that the students were highly satisfied to use electronic books to learn English spelling with the phonics methods.

Lastly, studies which used games in the classroom show positive results. Roekmuang (2009) studied the use of vocabulary games to develop the English vocabulary of Grade 4 students. The participants included 32 students. Over four weeks of research, four hours of English classes were provided for a total of 16 hours. The research instruments included eight lesson plans, a test, and the student questionnaires. The results reveal that the students' retention improved by more than 70 percent when using learning English vocabulary games.

Diniyati (2009) studied the use of crossword puzzles to the spelling of 41 Grade 4 students. A pretest, posttest, and assessments were used to collect the data. The results show that the crossword puzzles improved the students' spelling. More interestingly, using games was considered to be the main factor that affected the students' interest and improvement.

The present study employed gamified lessons to improve the English vocabulary learning of young Grade 3 student learners. The aforementioned studies are referred to in the discussion section of the study results.

2.8 Types of spelling errors

Cook (1999; cited in Al-Oudat, 2017) argued that there are four types of spelling errors: Substitution; insertion; omission; and transposition. Errors of substitution indicate a failure to recognize English words that have letters with sounds different to their phonic sound. Substitution errors were about bound morphemes, such as instead of writing 'dear', the students instead wrote 'deer'. Second, insertion errors are where an extra letter is added to a word, for instance one student wrote 'useing' instead of 'using'. This may be due to the students being unaware that English is not a phonetic language, so they attempted to write words the same way that they say them. Third, omission errors are where some letters of a word are missing. The most common form of omission errors are the phoneme "e" at the end of words, such as 'befor' for 'before', 'ignor' for 'ignore', and 'coffe' instead of coffee. This is due to limited phonology awareness. Finally, transposition errors are due where the word sequence is ordered incorrectly, such as 'foucs' for 'focus' or 'dialy' for 'daily'. These are due to the students' carelessness or confusion about word elements.

According to Wendling and Mather (2018), there are five spelling rules that explain how children can make spelling errors. The five English spelling rules should be taught to help children understand how to add suffixes and when a letter should be dropped, added, or changed. These five features include the rules of doubling the consonant, or 'the Floss rule', referring to words with two final letters and where a student may forget one of the final letters during spelling tasks. Second, the rule for doubling the medial consonant, or 'the Rabbit rule', refers to where the medial consonant is doubled in a two-syllable base word with one medial consonant sound after a short vowel. Third, the doubling rule is where a writer uses two consonants in place of one consonant for a word that utilize one consonant to represent the end of one syllable and the beginning of another syllable, for instance "cappital" may be written instead of "capital". The double rule refers to word that have a final consonant of a syllable which is also pronounced as the first consonant of another syllable. Fourth, the dropping rule, or dropping the silent 'e', occurs when words have an additional but unpronounced 'e' as the final letter of the word. Finally, the changing rule concerns words ending with 'consonant -y' which changes to 'consonant -i', but if the word has a vowel before the final '-y', the '-y' does not change.

These types of spelling errors can be used to enable qualitative analyses of spelling errors. It can be seen that spelling errors provide more meaningful information about the orthographic knowledge of individuals rather than scoring spelling errors as 'right' or 'wrong' as is commonly evaluated. The errors can show how children represent certain phonetic elements in English orthography, or how knowledge of letters can improve spelling.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology used in this study. The first section discusses the research design and participants. The lesson design is then explained. The research instruments are then provided, while the data collection and analysis methods are presented at the end of the chapter.

3.2 Research design

The study employed a mixed method design. The quantitative research consisted of a pretest and posttest to collect data, with the scores calculated using descriptive statistics, namely S.D. and means. T-Test was also used to compare means. The students' pretest and posttest scores were analyzed to determine the participants' improvement after participation in the designed gamified lesson. The qualitative design also included the use of a spelling exam paper to analyze spelling mistakes.

3.3 Participants

The research participants included young learners studying English as a foreign language. The participants were 18 Grade 3 students (6 males and 12 females) studying at Bankantrok Prachasan School, Si Sa Ket Province, Thailand. The research was conducted during the second semester of the 2019 academic year. In Grade 1 and 2, the students had learned the alphabet, number, and some word families, such as fruits, animals, days. Meanwhile, in Grades 3 to 6 the students learn how to pronounce English words using phonics. The researcher was the class teacher of this student group.

3.4 Lesson design

The lessons were designed based on the theoretical discussion in Chapter 2. As reviewed in Chapter 2, the teaching technique used is a gamified classroom activity and is expected to be suitable for the school context. In this research, gamification is not

through online games, but rather a classroom activity designed with four game elements, including points, badges, levels, and rewards, as discussed in Chapter 2.

The target vocabulary was selected based on the word list recommended for Grade 3 learners by the English Language Institute of the Ministry of Education. This list includes 154 English basic vocabulary which Grade 3 students are expected to know. The vocabulary can be divided into four word types: Nouns (118 words); verbs (23 words); adjectives (12 words); and adverbs (1 word). Nouns were the focus of the present study, since they make up the majority of words in the word list provided by the Ministry of Education.

A pilot study was conducted which aimed to identify words the students did not know so they could be included as the target words. During the pilot, the students took a reading test of the 154 English basic vocabulary word list. Thirty non-phonetic words were selected from this list because none of students were able to read them. It was deemed that 30 words would be suitable for the students to learn within a 50 minute class session. Five lessons were undertaken in total in the study. Each lesson included six nouns for a total of 30 target words.

The activities in each of the five lessons were the same: Remembering the word; matching the words and the picture; arranging the words on the card; filling in the blanks for missing letters; and spelling the word. Prior to learning with the designed lesson, the students had learned about phonics with the aim of helping them to understand and recognize the sound of the letter. The students proved to be good at recognizing the words and their meanings. For this reason, the main lesson activities focused on spelling and other activities such as remembering words were additional parts of the lessons to help them prepare to learn to spell them.

The lesson plans consisted of general information and the stages of the classroom activities. The general information included the teacher's name, week number and hour, class level, materials, and learning outcome.

Table 3.1 Lesson plan

LESSON PLAN	Teacher's name: Siriporn Saman	
	Week: 1	1st Hour
Class/Level: Grade 3 Materials: Flashcards with pictures and words Learning outcome(s): The students can read and write the noun vocabulary e.g. basket, bathroom, bedroom, bicycle, blackboard, bookcase.		

The second part of the lesson plan outlined the different stages of classroom activities including lead-in preparation, presentation, practice, and production.

Table 3.2 Stages of Lesson plan

Stage	Timing	Procedure	Purpose of the Activity
Lead-in Preparation	10 mins.	<ul style="list-style-type: none"> - Get students' attention. - Show a basket and ask students: "What is this?" Elicit answer and praise. - Give instruction: Tell students to name the objects (answers can be in Thai... e.g. thra-kra = basket, hong-nam = bathroom) - Show them the names of the objects in English. 	<ul style="list-style-type: none"> -To activate the class, focus on students, review vocabulary. -To motivate learners to remember the activity.
Presentation	10 mins.	<ul style="list-style-type: none"> - Model pronunciation of the words: Basket; bathroom; bedroom; bicycle; blackboard; and bookcase. - Drill the words with the 	<ul style="list-style-type: none"> -To give the students multiple opportunities to practice the words, both in groups and individually.

Table 3.2 Stages of Lesson plan (Continued)

Stage	Timing	Procedure	Purpose of the Activity
		whole class and individually. - Listen and correct any errors. - Use 6 flashcards to introduce the name of objects.	
Practice 1	10 mins.	- Get students' attention. Divide students to work in pairs. - Give instructions for the activity (vocabulary and pictures matching activity). -Match the pictures to the words working in pairs. -Monitor, praise and help where necessary. -Check answers with another group. - Show the answer on the board.	To motivate students to be competitive with the other groups, and give points to those able to correctly finish the word first).
Practice 2 (Spelling)	10 mins.	- Show the scrambled flashcards of the letter on the board. - Ask students to guess what the word is. - Students play "Spelling Race". - Give points to those who	- To inspire students to have fun while learning vocabulary.

Table 3.2 Stages of Lesson plan (Continued)

Stage	Timing	Procedure	Purpose of the Activity
		can spell the word correctly.	
Practice 3 (Spelling)	10 mins.	<ul style="list-style-type: none"> - Give instructions for the activity. - Students do the activities on the worksheet to practice spelling. Activity 1: Fill in the missing letter blanks. Activity 2: Spelling words from pictures. 	- To emphasize the word spelling to the students.
Production	10 mins.	<ul style="list-style-type: none"> - Divide students into two groups by counting 1 and 2. - Students stand in lines. - Give instructions for the activity. - Play "Back to the board". - Monitor, praise, and help where necessary. - <i>(At the end, praise all students. Give them points to collect for the next lesson and show where they are in each level).</i> 	- To show the students that they can remember the word, know the meaning, and be able to spell the word correctly.

Activities in the lead-in preparation parts involved showing real objects or pictures to gain the students' attention. The practice stage activities included listening and drills, matching vocabulary and pictures, arranging words from scrambled letters, filling in a missing letter, and writing words down. Finally, the production stage activities had the

students playing “Back to the board”, in which they were required to produce a word on the board by themselves.

3.5 Research instrument

The pretest and posttest were created by the researcher and checked by two other EFL teachers. Each lesson began with a pretest which included six items of the target words, and then each lesson ended with a posttest identical to the pretest. The tests were used to evaluate the students’ English spelling skills. After the five lessons, a total of 30 target words were assessed in the pretests and posttests. During the pretests and posttests, the students were asked to look at the pictures and then write down words related to them.

3.6 Data collection

Data was collected from the pretest and posttest scores from the five lessons. Before each lesson, the learners took a spelling pretest and then took an identical posttest at the end of each lesson. The students’ test papers were collected and any mistakes that were found in their answers were included in the data analysis to examine the nature of the mistakes after learning with the gamified lessons.

3.7 Data analysis

The pretest and posttest scores underwent data analysis to answer the research questions. Scores were calculated using descriptive statistics, namely S.D. and means, while T-Test was used to compare the means. For qualitative data, the students’ spelling mistakes were analyzed by categorizing them into different groups using categories suggested in the literature (Carreker, 2005; Cook, 1999).

CHAPTER 4

RESULTS AND DISCUSSIONS

This chapter presents the results of the study which are presented according to the study's research question: *To what extent can gamified lessons help improve Grade 3 students' English spelling skills?* The study results are divided into two parts, first the overall results are shown, and then the results from the three student groups will be discussed.

4.1 Overall results

Eighteen Grade 3 students participated in the study during the second semester of the 2019 academic year at Kantrok Prachasan School in Si Sa Ket Province, Thailand. The participants attended five lessons designed to help them improve their spelling skills. Each lesson consisted of six words for a total of 30 words taught across all five lessons. Before each lesson, the students did a spelling pretest by writing down the words they heard. They then participated in a series of activities to help them spell the words. After the lesson, they completed a spelling posttest. The pretest and posttest results are shown in Table 4.1

Table 4.1 Individual pretest and posttest mean scores

Sample groups (N=18)	Pretest (N=30)	Posttest (N=30)
G1-1	0	26
G1-2	2	21
G1-3	1	20
G1-4	0	20
G1-5	2	18
G1-6	0	18

Table 4.1 Individual pretest and posttest mean scores (Continued)

Sample groups (N=18)	Pretest (N=30)	Posttest (N=30)
G2-1	0	17
G2-2	0	12
G2-3	1	9
G2-4	0	9
G2-5	0	8
G2-6	0	7
G2-7	0	5
G2-8	0	5
G3-1	0	7
G3-2	0	6
G3-3	0	4
G3-4	0	2

From Table 4.1, it is evident that the pretest scores for all the students were lower than the posttest scores. The individual pretest scores were very low, with some scoring 0 out of 30 points, while only two got 2 points, and one achieved 1 point. Yet all the participants received higher scores in the posttest. The highest posttest score is 26, while the lowest score is 2 out of 30. There was an improvement for all participants, but the degree of improvement varied between them. For example, participant G1-1 received 0 in the pretest and got 26 points in the posttest, while G3-4 received 0 points in the pretest but only got 2 points in the posttest. This difference will be addressed when analyzing the different later in this chapter. A paired sample T-Test was conducted on the scores in Table 4.1, with the results shown in Table 4.2.

Table 4.2 Overall paired sample T-Test results (two-tailed)

Statistical analyses	Mean scores	
	Pretest (30 points)	Posttest (30 points)
Mean	0.33	11.89
SD	0.69	7.21
Probability value (<i>p</i> -value)	0.0000019	

Table 4.2 shows the overall mean scores from the pretest and posttest. The dependent T-Test found that the value of *t* is 7.057111, while the value of *p* is $< .00001$, and the result is significant at $p < .01$. These results from the pretest ($M = 0.33$, $SD = 0.69$) and posttest ($M = 11.89$, $SD = 7.21$) indicate that the use of gamified lesson improved the Grade 3 students' English spelling.

The overall result presents a statistical significance meaning that the designed lessons help to improve the students' spelling skills. Despite this strong *p*-value, this can be misleading because it can be seen that the SD value in the posttest significantly increases in the posttest. The increase suggests that some participants improved more significantly than others. Based on this, a further analysis was undertaken on different participant groups with the results shown in the next section.

4.2 Results by participant groups

The participants were divided into three groups according to their English grades from the first semester. The first group was graded in the range of 3.5 to 4 (out of 4) was considered to be fast-paced learners and included six participants. Next, those who received a grade in the range of 2 to 3 were considered to be moderate-paced learners and included eight participants. The final group received grades between 0 and 2 and consisted of four participants, and for the purpose of the study these students were considered to be slow-paced learners. The mean scores of these three groups of learners was calculated using a dependent T-Test, with the results shown in Table 4.3.

Table 4.3 Paired sample T-Test (two-tailed) by participant groups

Groups of learners	Fast-paced learner group (N=6)		Moderate-paced learner group (N=8)		Slow-paced learner group (N=4)	
	Pretest (N=30)	Posttest (N=30)	Pretest (N=30)	Posttest (N=30)	Pretest (N=30)	Posttest (N=30)
Mean score	0.83	20.5	0.13	9.00	0.00	4.75
SD	0.98	2.95	0.35	3.96	0.00	2.22
Probability value (p-value)	0.00003		0.0004		0.023	

Table 4.3 shows the degree of improvement for all three learner groups. The fast-paced learners had the highest degree of improvement, followed by the moderate-paced learners and then the slow-paced learners, respectively. The fast-paced learners' overall mean pretest score is 0.83, which increased to 20.5 in the posttest. For the moderate-paced learner group, their overall mean pretest score is 0.13, which improved to 9.00 in the posttest. Lastly, the slow-paced learner group had the smallest degree of improvement, from an overall mean pretest score of 0.00 improving to 2.22 out of 30 in the posttest.

The p-values of the three groups indicate statistical differences between the pretest means and the posttest means within their groups. The dependent T-Test on the scores from the high achieving group shows that the value of t is 14.23. The value of p is .00003. The result is significant at $p < .01$. These pretest results ($M = 0.83$, $SD = 0.98$) and posttest results ($M = 9.0$, $SD = 3.96$) indicate that the use of gamified lesson resulted improved the fast-paced learners' English spelling. By conventional criteria, this difference is considered to be extremely statistically significant.

The dependent T-Test on the scores from the moderate-paced learner group shows that the value of t is 6.30733. The value of p is .0004. The result is significant at $p < .01$. The pretest results ($M = 0.13$, $SD = 0.35$) and posttest results ($M = 20.5$, $SD = 2.95$) indicate that the use of gamified lesson improved the moderate-paced learners' English spelling. While there are too few students in the slow-paced learner group to run a

dependent T-Test, the test was applied to provide a comparison with the other two groups. The dependent T-Test on the mean pretest and posttest scores from the slow-paced learner group shows that the two-tailed P value equals 0.0234 ($p=0.023$), which is interpreted to be a statistically significant as well.

While these results show the statistical significance of the improvement for all groups, it must be noted that these results do not indicate that the lessons were effective for all groups. It can be said with confidence that the lessons were effective for the fast learners because they experienced the highest degree of improvement and their individual and whole group posttest scores were very high. This however is not the case for the other two groups. Although the students in the moderate and slow-paced learner groups experienced some improvement, most of them did not manage to achieve 50% (15 out of 30). It is therefore necessary to adjust the lesson so that it can help students in the moderate and slow-paced learner groups. Suggestions for further studies on the basis of these results are provided in the next chapter.

4.3 Qualitative analysis of the spelling errors

The students made some mistakes when they spelled the 30 words. Some of these mistakes are considered minor mistakes, but since the present study is focused on accuracy, these mistakes reduced their posttest scores. It is important to analyze these mistakes because it will enable an understanding of what is necessary for the students to spell correctly. Furthermore, the analysis will also be useful in the design of an improved lesson.

A few different aspects of the minor mistakes must be considered. Minor mistakes here refer to missing letters in words which do not affect how the word is read. This means that while something is missing in the words, it is not difficult to guess what the word is. Common minor mistakes can be categorized using the categories of spelling mistakes as discussed in Chapter 3 (Essays, 2018). It was found that the participants committed four groups of spelling mistakes: The “Floss” rule for the finals -f, -l, -s; the rule for the final -ck; the doubling rule; and dropping silent e. Each category is presented with examples as follows.

4.3.1 “Floss” rule for final f, l, s

The Floss rule refers to words with two final letters. Students tend to forget

one of the final letters when spelling these words. From the data of the study, these words are classroom, wolf, and chalk. The participants spelt these words as *clasroom*, *wof*, and *chak*. It is evident that an s is missing in *clasroom*, and an l in *wof* and *chak*. The missing letter could be the first or the second of the two final consonants.

4.3.2 Rule for -ck

The mistake related to the rule for -ck occurs to words ending with -ck. This ending is often replaced with -k or -c. In the data from the present study, only one word had such an ending, stick. The spelling mistakes for this word included *stic* and *stik*. Although the spelling is not correct, the actual word can be guessed and so it is considered a minor mistake.

4.3.3 Doubling rule

The double rule refers to a word with a final consonant of a syllable which has the same pronunciation as the first consonant of another syllable. This can be confusing for students who repeat the letter after hearing it. Examples of this include pomelo, sharpener, and musician. The participants spelled these as *pommel*, *sharpenner*, *musiccian*. This shows that the mistake occurred with closed syllables and the students added a double letter. This is a minor mistake since the incorrect spelling is close to the correct one with just one additional letter.

4.3.4 Dropping silent e

Dropping the silent e happens when the words have an additional e as a final letter in the spelling, but it is not pronounced. This silent e is not dropped in the spelling. Examples include bookcase, cabbage, nurse, and sauce. The students in this study made spelling mistakes with these words, so they became *bookcas*, *cabbag*, *nurs*, and *sauc*. These mistakes can be easily noticed, and because it does not affect how the words are read it is considered to be a minor mistake.

Minor spelling mistakes

It is important to consider these minor mistakes in two ways: How they affect the students' overall performance; and how they affect different groups of students. Table 4.4 shows the results relevant to the two questions.

Table 4.4 Number of incorrect items with minor spelling mistakes

Sample groups	1	2	1+2
	Correct spelling items in the posttest	Incorrect items due to minor mistakes	
G1-1	26	4	30
G1-2	21	4	25
G1-3	20	5	25
G1-4	20	5	25
G1-5	18	5	23
G1-6	18	5	23
G2-1	17	5	22
G2-2	12	2	14
G2-3	9	3	12
G2-4	9	1	10
G2-5	8	1	9
G2-6	7	2	9
G2-7	5	1	6
G2-8	5	1	6
G3-1	7	1	8
G3-2	6	1	7
G3-3	4	1	5
G3-4	2	0	2
Mean scores	11.89		14.50

The results in Table 4.4 show that the overall mean score increased from 11.89 in the pretest to 14.50 out of 30 in the posttest when items with minor mistakes are counted. This indicates that if the lessons were designed to target minor mistakes in advance, it would help the students achieve better in general. This might be particularly true for the fast-paced learner group as their scores would be significantly increased. Most students in this group would gain up to five points. However, while this deals with

minor mistakes for the fast-paced learner group, it might not be as effective for the other two groups whose real problems might be related to other causes. This shall be discussed further in the next chapter.

Table 4.5 Examples of incorrect items with minor spelling mistakes

Fast-paced learner (G1-6)		Moderate-paced learner (G2-8)		Slow-paced learner (G3-4)	
Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
1. basges	barket	badkat	basked	bhete	
2. basroom		brdbrob	badroom	basro	batrum
3. badroom		brdrom	bedhroom	badro	bedrum
4. biseeco		bicikl	bicicol	bicol	bicikol
5. blegbot	blakbord	blcak	blackbod	bakbod	blacbod
6. boogkat		bokcas	bookces	bok	bookes
7. kep baj	cabbaje	kabbab		cabes	cabbed
8. kadso		casre	clascle	ketl	
9. chogl	cholk	shoc	chok	cok	chok
10. casroom	clasroom	casth	casroom	kasrom	clasrom
11. civcumber		cuykumb	cucomber	civkamb	cucumbe
12. doter	daugter	doter	daught	dorte	dauter
13. jeens		jens	jeens	jns	jjinse
14. miwrer		methwo		meere	mirer
15. miwsixcheen		metprtst	music	misix	misic
16. nes		netis	nerse	nes	nure
17. pry		ptb		pi	pei
18. pommeylo		petsimet		poml	pomalo
19. cwedschun		sntrs	quscine	kes	questio
20. sowt	sult	solt		cal	sult
21. sods		sos	sorse	cence	saus
22. sodsach	sauses	so ses	sodses	sods	sauses

Table 4.5 Examples of incorrect items with minor spelling mistakes (Continued)

Fast-paced learner (G1-6)		Moderate-paced learner (G2-8)		Slow-paced learner (G3-4)	
Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
23. chapener	sharpaner	spolesspo	sharpe	pene	sarpene
24. chots		snpiti	shots	croet	sots
25. sope	soab	sab	saop	cop	soab
26. sojer	solejer	sajer	solder	soje	sojer
27. stic		sxpn	stig	sati	satik
28. sweex		sale	swig	sawee	sawin
29. wocs	woch	wot	wach	wor	ward
30. wupf		wuf	wulf	woob	wuf
0	18	0	5	0	2

The results in Table 4.5 show example participant scores from fast-paced learners (G1-6), moderate-paced learners (G2-8), and slow-paced learners (G3-4). These examples were selected from the participants with the lowest score from each group. Although the scores of these group are very low after considering the four types of spelling mistakes, these show learner improvement in different ways. For example, all the learners struggled with the word “classroom” in both the pretest and posttest, with the fast-paced learners (G1-6) writing wrote as ‘casroom’ in the pretest and ‘clasroom’ in the posttest, moderate-paced learners (G2-8) wrote ‘casth’ in the pretest and ‘casroom’ in the posttest, and slow-paced learners (G3-4) wrote ‘kasrom’ in the pretest and ‘clasrom’ in the posttest.

When considering Table 4.5 above, although the words were spelled incorrectly, the improvement can be seen by considering the phonic sounds. Therefore, learning phonics could be considered to have an effect on spelling. Moreover, the ability of learners must also be considered, since the fast-paced learners got higher scores, while slow-paced learners got very low scores. However, Table 4.5 shows that all the groups improved, showing that the gamified lessons are effective at improving the English

spelling of Grade 3 students, but the extent of the improvement is dependent upon the learners' abilities.

CHAPTER 5

DICUSSION AND CONCLUSION

This chapter discusses the three main points raised from the study results. The chapter begins with an explanation of these main points and then each point is discussed in turn in separate sections. Related theories and previous studies are referred to in the discussion.

5.1 Discussion points

The gamified lessons in this study were designed in-class activities for to teach English vocabulary spelling using game elements. The study focused on spelling activities, but game elements were embedded to help young learners learn English as a foreign language. The game elements were expected to motivate the students to engage themselves in the learning activities and help them learn vocabulary spelling. The main game element was competition. Flashcards were used to help all the students learn to spell, while the students also competed with each other to complete different tasks. Flashcards were used in place of computer games because the classroom context in which the study was conducted was not well equipped with modern technology such as computers.

After the five lessons as discussed in Chapter 3, the students learned a total of 30 new words in English. It was found that the overall posttest scores were significantly higher than the pretest, providing evidence that the gamified lessons helped the students to acquire English spelling skills. Nevertheless, the results from the three student groups show different degrees of learning progresses. The fast-paced learners had the biggest improvement, followed by the moderate-paced learners and slow-paced learners, respectively.

Three main points will be discussed in the present chapter based on these results. The first point deals with the effectiveness of the lesson design of the study. The second is concerned with the need for explicit identification of minor errors in order to help students learn better. Finally, the third point is related to the effect of phonic learning on spelling mistakes.

5.2 Effectiveness of the gamified lesson to improve spelling

The overall study results show that gamified lessons helped the students improve their spelling. It was found that the mean scores of all the Grade 3 students in the pretest and posttest were very different. The result shows that students improved their spelling to different extents depending on their abilities. The fast-paced learners experienced the biggest improvement, followed by the moderate-paced learners and the slow-paced learners, respectively. It can therefore be concluded that the designed gamified lesson in the present study helped high achieving learners more than the other groups.

Gamification utilizes ideas and practices common in games in non-game activities, and it can theoretically help learners achieve learning outcomes in a less stressful learning environment (Flores, 2015; Gardo, 2017). Other studies have presented results that support these theoretical benefits of gamification (Katora, 2019; Lui, 2012), including studies with in-class gamified lessons to teach spelling (Astuti, 2015). However, the results of the present show that the benefits of gamified lessons in the classroom might not be for everyone. The fast-paced learners were able to take more advantage of the designed lessons with game elements than the other groups. Three points can be further discussed.

First, it must be noted that gamified lessons might be appropriate for students who are fond of games. While the idea of games or gamification is popular in education, many students do not play games or enjoy earning points (Cassie, 2016; Kapp, Blair, and Mesch, 2014). This means that although the class was managed in a game context, not everyone in the class will be motivated. In the present study, it could be observed that students in the slow-paced learner group were not particularly eager to learn.

Another reason is related to class-time constraints. The gamified lessons in this study were customized to fit the rural school and elements of games were picked selectively. This could affect the moderate-paced and slow-paced learners. Fully gamified activities are typically online, and when all ideas of gamification are used lessons are more flexible on an online platform. It was impossible to be flexible with the classroom activities in the present study. In particular, time was limited so all the students had to follow the exact same steps of learning. Limited time might account for why some of the learners were more successful than the others. According to Pike (2015), gamification can offer cognitive benefits effectively when students have

sufficient class time to complete the tasks or engage with the activity. Furthermore, class time must be long enough for students to successfully learn from gamified lessons (Pike, 2015). The classroom activities in the present study were carried out for 50 minutes in each class session. The fast-paced learners had no issues with time and were able to learn and complete the lesson tasks on time. However, the moderate-paced and slow-paced learners required more time to practice, making the fifty-minute class limitation a real challenge.

5.3 Effects of phonic learning on spelling words with complex spelling

Previous studies have found that learning phonics helps learners to read and spell words (e.g. Roberts and Meiring, 2006). Studies in Thailand have also found benefits of phonic instructions (e.g. Kodae and Laohawiriyanon, 2011; Phumalai, 2014). For instance, Phumalai (2014) studied the use of an electronic book with the phonics method to develop English spelling skills. Phumalai (2014) found that the phonics method helped the students to improve their English word spelling skills. This showed that phonics is useful for students to improve their spelling.

However, the advantage of phonics might be limited to the spelling of simple words, whose pronunciation and spelling match perfectly. Meanwhile, words whose pronunciation and spelling do not match (non-phonetic words) are not straightforward for learners to spell even if they have strong phonic knowledge, so “students must memorize non-phonetic words because sounding out the letters will not reveal how such words are pronounced” (Siljander, Reina, and Siljander, 2005 p.75). The students in the present study had previously learned phonics, and the study results show that the students had difficulties when spelling words with complex spellings. A mismatch between pronunciation and the actual spelling of the word confused them. When they were unable to remember the correct spelling, they tended to rely on the letter and sound relationships as they previously learned. Therefore, despite the effectiveness of the gamified lesson, it could be concluded that phonics instruction could support the spelling of simple words, but this is problematic for more complex words.

5.4 The need for explicit identification of minor errors

Four patterns of spelling mistakes were found in the study which were outlined in Chapter 2, namely the *Floss rule* for final *f, l, s*, rule for *ck, -tck, -dge*, *k rule*, doubling

rule, dropping silent *e* and *Y-to-I* rule (Wendling and Mather, 2009). The mistakes found in the present study consist of the Floss rule for final *f, l, s*, rule for *ck*, double rule, and dropping silent *e*. Such mistakes inhibit the effectiveness of the gamified lessons and should therefore be dealt with so that the teaching can be more effective.

Gamified lessons could be more effective if explicit error identification is included. As the study results suggest, some students would get full marks if minor mistakes were counted as correct answers, while other students would improve their scores. To do this, it is first important to focus more on the different sounds between Thai and English. This can be seen in the unit of final sounds which are completely different between Thai and English, such as the final */f/*. According to Thummawongsa (2017), the effect of a learner's native language should be considered as an issue in the writing skills for EFL learners. Therefore, students must be aware of writing errors due to negative transfer. Shan-ling and Yan (2013) stated that the negative transfer from the mother tongue affects the process of English writing in lexical, syntactic, and discourse aspects. Therefore, differences between the letters and sound patterns between the learner's first language and target language should be focused on.

CHAPTER 6

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

This chapter includes three sections. The first part provides a brief summary of whole study, including key findings and discussion points. The second part discusses the study's limitations, while the third part offers suggestions for teaching spelling and future research.

6.1 Conclusions

The present study applies the concept of gamification, or the use of game elements, in the design of learning activities within a typically non-game classroom context. The purpose of the study was to help Grade 3 students improve their spelling skills. Gamified lessons with flashcards were developed for this purpose. Five lessons were taught, each of which lasted for one hour. The students learned six words in each lesson for a total of 30 words across all the lessons. A spelling pretest and a posttest were used as the main data collection tool.

It was found that the participants generally improved their spelling skills. The participants' improvement can be divided into three groups. The group of fast-paced learners had the highest degree of improvement, while the moderate-paced and slow-paced learners had smaller gains. From these results, three points were discussed, including the effectiveness of the gamified lesson to improve spelling, the effects of learning phonics on spellings words with complex spelling, and the need for explicit identification of minor errors.

6.2 Limitations

The primary limitation of the present study is the use of specific game elements. The term gamified lesson is therefore used in a very limited sense. This limitation may present a difficulty when seeking to compare the results of other gamified lessons in the future. However, it must be noted that no gamified lessons are the same. Another limitation is related to class time, since the 50 minute classroom was a significant time constraint for the study to design a more effective gamified lesson for learner groups.

6.3 Suggestions

Teaching spelling through gamified lessons must consider the students' knowledge about phonics. Phonics can cause spelling mistakes for certain words and present an obstacle for the spelling of non-phonetic words. It is important to ensure that students are aware of the limitations of phonics and that they do not apply the sound and letter relationships in the spelling of all words. It is also important to provide sufficient class time to teach gamified lessons so that moderate-paced and slow-paced can learn more effectively. Game elements are good, but students require sufficient time to digest what they have learned through gamified activities. Some learners may need additional help, such as an explicit explanation of mistakes they make so that they are able to learn some exceptions and avoid minor mistakes.

Further studies can make use of the design the study and use more game elements to help learners of different abilities. Studies should also measure motivation and engagement since these could strongly influence the efficacy of gamified lessons.

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APPENDIX

Table Individual pretest and posttest mean scores

N=1 8	Student s	Lesson 1		Lesson 2		Lesson 3		Lesson 4		Lesson 5		Total scores	
		Pre- test	Post- test	Pre- test	Post- test	Pre- test	Post- test	Pre- test	Post- test	Pre- test	Post- test	Pretest	Posttest
1	G1-1	0	6	0	6	0	6	0	4	0	4	0	26
2	G1-2	1	3	0	4	0	5	1	5	0	4	2	21
3	G1-3	1	5	0	3	0	5	0	4	0	3	1	20
4	G1-4	0	4	0	4	0	6	0	3	0	3	0	20
5	G1-5	1	4	0	4	0	4	1	2	0	4	2	18
6	G1-6	0	4	0	2	0	6	0	3	0	3	0	18
7	G1-7	0	2	0	2	0	6	0	3	0	4	0	17
8	G2-1	0	5	0	1	0	4	0	1	0	1	0	12
9	G2-2	0	1	0	0	0	2	1	3	0	3	1	9
10	G2-3	0	3	0	1	0	3	0	1	0	1	0	9
11	G3-1	0	1	0	0	0	3	0	3	0	1	0	8
12	G3-2	0	0	0	0	0	4	0	1	0	2	0	7
13	G3-3	0	1	0	0	0	3	0	2	0	1	0	7
14	G3-4	0	3	0	1	0	2	0	0	0	0	0	6
15	G3-5	0	0	0	0	0	3	0	2	0	0	0	5
16	G3-6	0	0	0	1	0	3	0	1	0	0	0	5
17	G3-7	0	0	0	0	0	0	0	4	0	0	0	4
18	G3-8	0	1	0	1	0	0	0	0	0	0	0	2
												0.33333	11.8888
												3	9

Table Individual pretest and posttest mean scores. Overall paired sample T-Test results (two-tailed)

t-Test: Paired Two Sample for Means

	<i>Pretest</i>	<i>Posttest</i>
Mean	0.333333333	11.88888889
Variance	0.470588235	51.9869281
Observations	18	18
Pearson Correlation	0.424175901	
Hypothesized Mean Difference	0	
df	17	
t Stat	7.057111088	
P(T<=t) one-tail	9.62988E-07	
t Critical one-tail	1.739606726	
P(T<=t) two-tail	1.92598E-06	
t Critical two-tail	2.109815578	

Table Number of incorrect items with minor spelling mistakes

N=18	Students	Lesson 1		Lesson 2		Lesson 3		Lesson 4		Lesson 5		Total scores	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pretest	Posttest
1	G1-1	0	6	0	6	0	6	0	6	0	6	0	30
2	G1-2	1	6	0	5	0	5	0	4	0	5	1	25
3	G1-3	1	5	0	4	0	5	1	6	0	5	2	25
4	G1-4	0	5	0	5	0	6	0	4	0	5	0	25
5	G1-5	1	5	0	6	0	5	1	2	0	5	2	23
6	G1-6	0	4	0	4	0	6	0	4	0	5	0	23
7	G1-7	0	5	0	2	0	6	0	5	0	4	0	22
8	G2-1	0	5	0	3	0	4	0	1	0	1	0	14
9	G2-2	0	1	0	1	0	4	1	3	0	3	1	12
10	G2-3	0	1	0	2	0	3	0	3	0	1	0	10
11	G3-1	0	1	0	1	0	3	0	3	0	1	0	9
12	G3-2	0	3	0	1	0	3	0	1	0	1	0	9
13	G3-3	0	0	0	0	0	4	0	2	0	2	0	8
14	G3-4	0	0	0	0	0	4	0	3	0	0	0	7
15	G3-5	0	3	0	1	0	2	0	0	0	0	0	6
16	G3-6	0	0	0	2	0	3	0	1	0	0	0	6
17	G3-7	0	0	0	0	0	0	0	5	0	0	0	5
18	G3-8	0	1	0	1	0	0	0	0	0	0	0	2

Table Number of incorrect items with minor spelling mistakes. Overall paired sample T-Test results (two-tailed)

t-Test: Paired Two Sample for Means

	<i>Pre-test</i>	<i>Post-test</i>
Mean	0.333333333	14.5
Variance	0.470588235	79.32352941
Observations	18	18
Pearson Correlation	0.44288132	
Hypothesized Mean Difference	0	
df	17	
t Stat	6.968976046	
P(T<=t) one-tail	1.13185E-06	
t Critical one-tail	1.739606726	
P(T<=t) two-tail	2.26371E-06	
t Critical two-tail	2.109815578	

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